Type locality.—California: Santa Ynez Canyon, Cold Spring Canyon.

Genus **Onychelus** Cook

Orthotype: *Onychelus obustus* Cook.

This genus, characterized by having the telopodite of the posterior gonopods in the form of a simple erect or falcate blade, embraces the following species: *O. michelbacheri* Verhoeff, *O. obustus* Cook, and *O. phanus* Chamberlin from the southwestern area in addition to *O. nigrescens* Chamberlin from Lower California.

Tidolus, n. gen.

Differing from *Atopetholus* in the smaller and simpler telopodite of the anterior gonopods, which does not present a caudally directed branch or process and which is concealed in front view by the coxite. Posterior gonopods comparatively large, each in the form of an elongate, curved or bent, lamina that gradually narrows distad and has its margins turned up so as to form a furrow or channel along mesocaudal side.

Orthotype: *Tidolus parvus* (Chamberlin).

This genus is, so far, monotypic.

Tidolus parvus (Chamberlin)

Atopetholus parvus Chamberlin, Proc. Biol. Soc. Washington **31**: 168. 1918.

Type locality.—California: Claremont.

Watichelus, n. gen.

Differing from *Onychelus* in the much shorter, proportionately broader, sternite of the anterior gonopods, the large telopodite of which lacks the distal prolongation characterizing the other genus. In place of the simple blade representing the telopodite of the posterior gonopods in *Onychelus*, the telopodite in the present genus is distally furcate, with the principal branch simply dentate at its tip.

Orthotype: *Watichelus smithi* (Chamberlin).

This genus is as yet represented by a single species.

Watichelus smithi (Chamberlin)

Onychelus smithi Chamberlin, Proc. Acad. Nat. Sci. Philadelphia **99**: 49; *52, 53. 1947.

Type locality.—California: Riverside County, Murray Canyon, about 3 miles north of Palm Canyon.

ICHTHYOLOGY.—*Keys to the genera of echelid eels and the species of* Muraenichthys *of the Pacific, with two new species.*[1] Leonard P. Schultz and Loren P. Woods,[2] U. S. National Museum.

The worm eels referred to the family Echelidae form a complex group of species, occurring in most of the warm seas of the world. They are difficult to identify, and some species appear to be allied to the Ophichthyidae but lack the sharp-pointed tail. No less than 22 genera have been placed in the family at various times. Among these the following have been assigned to other families: *Verma* Jordan and Evermann, 1896, apparently related to the Ophichthyidae; *Bathymyrus* Alcock, 1890, referred to the Congridae by Myers and Storey, 1939, who refer *Sinomyrus* Lin, 1933, to the Dyssomidae; *Merinthiehthys* Rivero, 1934, which may belong to the Moringuidae; *Heteromyrus* Pietschmann, 1935, redescribed in 1938 by him and probably belonging with the Muraenidae; *Chrinorhinus* Rivero, 1932, probably belonging in the family Moringuidae, judged from notes on the type, kindly furnished by William C. Schroeder, of the Museum of Comparative Zoology. This leaves 16 genera, and there have been few attempts to compare them. Parr (Bull. Bingham Oceanogr. Coll. **3** (4): 8. 1927) clearly demonstrated the advisability of referring *Ahlia* to the synonymy of *Myrophis*. After examining the position of dorsal fin anywhere from over rear of head to a little behind anus and the variability of the dentition, we have gone still further

[1] Published by permission of the Secretary of the Smithsonian Institution. Received January 31, 1949. The drawings were made by Dorothea B. Schultz.

[2] We wish to correct a printer's error in our last paper, "A New Name for *Synchiropus altivelis* Regan, with a Key to the Genera of the Fish Family Callionymidae," in this Journal **38** (12): 420. 1948. Section *5b* in the key is out of place as printed. It should have been placed before section *8a*.

TABLE 1.—MEASUREMENTS MADE ON CERTAIN SPECIES OF MURAENICHTHYS RECORDED IN THOUSANDTHS OF THE TOTAL LENGTH

Characters	*retropinnis* Fowler				*philippinensis*, n. sp.		*johnstonensis*, n. sp.		
	Holotype	Marshall Islands			Philippines		Johnston Island		Bikini Atoll
Total length in mm.	114	111	107	105	119	92	145	81	122
Snout to anus	368	378	420	382	520	533	390	365	369
Snout to dorsal origin	544	558	560	518	739	696	569	558	549
Snout tip to tip of chin	7	7	6	7	2	2	8	11	8
Greatest depth	22	19	19	19	27	27	39	42	33
Head	100	105	107	100	98	101	117	126	100
Snout	18	18	19	17	13	13	23	28	19
Eye	6	5	7	5	4	4	10	10	7
Snout to rictus	32	27	28	27	27	26	32	38	30
Anal origin to dorsal origin between vertical lines	158	153	127	128	183	163	169	170	140
Interorbital space	9	8	10	9	10	10	14	13	10

and referred four other genera to *Myrophis* (see key). Myers and Storey (1939, p. 159) did not fully agree with this viewpoint; instead they described a new genus, *Hesperomyrus*. It is our opinion that the recognition of echelid genera must be done on a world basis and not on a study of local fauna.

The numerous species centering around *Muraenichthys* Bleeker are all without pectoral fins, and these too have the position of the dorsal fin origin anywhere from over the rear of the head to $1\frac{4}{5}$ head lengths behind the anus. Since there is much variability in the origin of the dorsal among the various species, in our opinion that character can not be used generically with this group of species. The teeth are variable, differing on jaws and vomer, from bands to a uniserial row, or absent on the vomer. We believe the dentition to be an excellent specific character. We have concluded that *Muraenichthys* should include all those echelid eels without pectoral fins, as defined in our key to genera, with a list of synonyms. Myers and Wade (1941) did not agree with this viewpoint; instead they recognized *Garmanichthys* Seale and described as new *Leptenchelys*, basing their generic separation largely on pointed snout, position of dorsal origin, uniserial vomerine teeth, and short tail, all of which characters are highly variable among the known species of this group. The median groove on underside of snout is a character present in *Leiuranus* of the family Ophichthyidae.

The genus *Muraenichthys* as recognized herein might be broken into subgenera after a comparison of all species in regard to the following important characters: (1) Position of posterior nasal opening, (2) Median groove on underside of snout between nostrils, as in *M. labialis* Seale and *M. vermiformis* (Myers and Wade), (3) pointed or blunt snout, (4) position of anus, and, one of the most important, (5) the dentition. Other characters are origin of dorsal fin, incompleteness of lateral line, position of bases of anterior nostrils in reference to tip of lower jaw, and distance between bases of anterior nostrils.

KEY TO THE GENERA OF ECHELIDAE

1*a*. Vomerine teeth arranged in 2 uniserial rows widely separated exeept where they divide anteriorly or may meet again posteriorly; teeth in lower jaw in 2 or 3 rows anteriorly, sometimes beeoming uniserial posteriorly.

2*a*. Pectoral fin absent; lip at side of lower jaw folded downward; posterior nasal opening on inside of upper lip, below front of eye, without valvular flap; dorsal origin about $\frac{1}{4}$ to $\frac{1}{3}$ head length behind gill opening; snout and tip of lower jaw broadly rounded; maxillary teeth uniserial.

Chilorhinus Lütken[3]

2*b*. Pectoral fin present; lips without folds; posterior nasal opening in upper lip under front of eye with valvular flap; dorsal fin origin slightly behind gill opening; snout and tip of lower jaw bluntly rounded.

Kaupichthys Sehultz[4]

1*b*. Vomerine teeth, if present, arranged along midline of roof of mouth, represented as a single tooth or a uniserial row or a narrow to broad band.

[3] *Chilorhinus* Lütken, Vid. Med. Nat. Fören. Kjøbenhavn, 1852, **1**: 16. (Type, *C. suensonii* Lütken.)

[4] *Kaupichthys* Schultz, U. S. Nat. Mus. Bull. **180**: 50. 1943. (Type, *K. diodontus* Schultz.)

3*a*. Pectoral fin present, sometimes represented by a tiny dermal flap near upper edge of gill opening.

4*a*. Vomerine teeth in a broad band, notably wider near middle of length than at ends; maxillary and dentary with teeth in a band; dorsal fin origin over tips of pectorals or nearly so; a transverse white line on nape....*Echelus* Rafinesque[5]

4*b*. Vomerine teeth, if present, in a narrow straight band or uniserial, never broadened near middle of length; teeth in jaws usually in 2 or 3 rows anteriorly, sometimes becoming uniserial posteriorly or uniserial throughout their length; dorsal fin origin from over gill opening to slightly behind anus.
Myrophis Lütken[6]

3*b*. Pectoral fin absent; dorsal origin from over middle of head to any location as far posteriorly as $1\frac{4}{5}$ head lengths behind a vertical line through anus; teeth on vomer, if present, varying from a uniserial row to a band and those on jaws varying from a uniserial row to a band...*Muraenichthys* Bleeker

Genus **Muraenichthys** Bleeker

Muraenichthys Bleeker, Nat. Tijdschr. Ned. Ind. **4**:505. 1853; Verh. Batav. Genoot. **25**, Muraen.: 52, 64, 71. (Type, *Muraena gymnopterus* Bleeker, designated in Atlas Ichthy.: 20. 1864.)

Seolecenehelys Ogilby, Proc. Linn. Soc. New South Wales, 1897 (2): 246. (Type, *Muraenichthys australis* Maeleay.)

Myropterus Ogilby, Proc. Linn. Soc. New South Wales, 1897 (2): 247. (Type, *M. laticaudata* Ogilby (not of Bleeker).)

Garmanichthys Seale, Bull. Mus. Comp. Zool. **61** (4): 80. 1917. (Type, *G. dentatus* Seale.)

Areniehthys Beebe and Tee-Van, Zoologica **23** (3): 301. 1938. (Type, *A. apterus* Beebe and Tee-Van.)

Leptenchelys Myers and Wade, Allan Hancock Pacific Exped. **9** (4): 72. 1941. (Type, *L. vermiformis* Myers and Wade.)

During our studies of the fishes of the atom bomb tests from the Marshall Islands and vicinity, we have observed two new species of *Muraenichthys*, one from the Philippines and the other from Johnston Island south of the Hawaiian group. These two new echelid eels are distinguished in the following key and then more fully described.

TENTATIVE KEY TO THE SPECIES OF MURAENICHTHYS OF INDO-PACIFIC

1*a*. Dorsal fin origin more than one head length behind anus; snout not strongly acute.

2*a*. No teeth on premaxillary or vomer; snout to anus 2.4 to 2.7, snout to dorsal origin 1.8 to 1.9, all in total length.

3*a*. Greatest depth 45 to 54 and head 10 to 10.5, all in total length.
Muraenichthys retropinnis Fowler

3*b*. Greatest depth 24 or 25, head 7.9 to 8.5 all in total length.
Muraenichthys johnstonensis, n. sp.

2*b*. Teeth on vomer biserial, those on maxillary and on dentary uniserial, a few premaxillary teeth; posterior nasal opening on outside of upper lip below lower front of eye; greatest depth 37, head 9.9 to 10.2, snout to dorsal origin 1.4, all in total length.
Muraenichthys philippinensis, n. sp.

1*b*. Dorsal fin origin less than a head length behind anus or in advance of it; teeth present on maxillary and on vomer.

4*a*. Dorsal fin origin closer to gill opening than to anus (see also 4*b*, 4*c*, 4*d*).

5*a*. Dorsal fin origin over gill opening or in front of it.

6*a*. Dorsal origin over gill opening; teeth in a narrow band on maxillary and dentary, inner row largest; vomerine teeth biserial.
Muraenichthys bicollaris Myers and Wade

6*b*. Dorsal origin notably in advance of gill openings; teeth uniserial on maxillary, dentary and vomer.
Muraenichthys vermiformis Myers and Wade

5*b*. Dorsal fin origin somewhat behind gill opening.

7*a*. Anterior nostrils tubular, elongate, their bases in front of tip of chin, and separated by a groove, sides of which are formed by a dermal fold, the groove continuing on underside of snout nearly to its tip; dorsal fin origin nearly a head length behind gill opening; teeth

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[5] *Echelus* Rafinesque, Caratteri Nuov. An. Sieil.: 63. 1810. (Type, *E. punctatus* Rafinesque, designated by Bleeker, Atlas Ichthy. **4**: 20. 1864.)

Myrus Kaup, Archiv Naturg. 1856 (1): 53. (Type, *Muraena myrus* Linnaeus = *E. punctatus* Rafinesque.)

[6] *Myrophis* Lütken, Vid. Medd. Nat. Fören. Kjøbenhavn, 1852, **1**: 1. (Type, *Myrophis longicollis* Kaup = *Myrophis punctatus* Kaup.)

Paramyrus Günther, Catologue of fishes in the British Museum **8**: 51. 1870. (Type, *Conger cylindroideus* Ranzani, designated by Jordan and Davis, Rep. U. S. Fish Comm. **16**: 641. 1892.)

Holopterna Cope, Trans. Amer. Philos. Soc. **16**: 482. 1871. (Type, *H. plumbea* Cope.)

Ahlia Jordan and Davis, Rep. U. S. Fish Comm. **16**: 641. 1892. (Type, *Myrophis egmontis* Jordan.)

Parabathymyrus Kamohara, On the offshore bottom-fishes of Prov. Tosa, Shikoku, Japan: 14, fig. 4. 1938. (Type, *P. macrophthalmus* Kamohara.)

Hesperomyrus Myers and Storey, Stanford Ichthy. Bull. **1** (4): 156. 1939. (Type, *H. fryi* Myers and Storey.)

in a single row on maxillary and on dentary; rear margin of eye over rictus; snout acute.

Muraenichthys labialis Seale

7*b*. Anterior nostrils tubular, not notably elongate, their bases opposite tip of chin; no groove or dermal folds between anterior nostrils; teeth on maxillary and on dentary in a narrow band, inner row largest; vomerine teeth in 2 rows or an irregular row.

8*a*. Dorsal fin origin less than a snout length behind gill openings.

Muraenichthys apterus (Beebe and Tee-Van)

8*b*. Dorsal fin origin about 4 or 5 snout lengths behind gill openings.

Muraenichthys macropterus Bleeker[7]

4*b*. Dorsal fin origin equidistant or nearly so between gill opening and anus.

Muraenichthys thompsoni Jordan and Richardson[8]

4*c*. Dorsal fin origin closer to anus than gill opening, but notably in front of anus; tip of snout and of lower jaw bluntly rounded.

9*a*. Teeth on vomer in a broad flattish patch forward, becoming a row posteriorly; those on maxillary and on dentary in a band.

10*a*. Dorsal fin origin $\frac{1}{5}$ to $\frac{1}{2}$ head length in front of anus.

Muraenichthys hattae Jordan and Snyder

10*b*. Dorsal fin origin $\frac{2}{3}$ to $\frac{4}{5}$ head length before anus.

Muraenichthys gymnopterus (Bleeker)[9]

9*b*. Teeth on vomer in one or two rows; teeth on maxillary and on dentary uniserial or biserial.

11*a*. Dorsal fin origin $\frac{2}{3}$ to $\frac{4}{5}$ head length in front of anus.

Muraenichthys godeffroyi Regan[10]

11*b*. Dorsal origin from $\frac{1}{5}$ to $\frac{1}{2}$ head length in front of anus.

12*a*. Vomerine teeth biserial.

Muraenichthys sibogae Weber and de Beaufort

12*b*. Vomerine teeth uniserial.

Muraenichthys cookei Fowler

4*d*. Dorsal fin origin over anus or nearly so to less than a head length behind anus.

13*a*. Rear margin of eye notably in advance of rictus of mouth.

14*a*. Teeth on maxillary and on dentary uniserial, those on vomer in 1 or 2 rows; snout acute.

15*a*. Dorsal origin $\frac{3}{4}$ head length behind anus; greatest depth 40 to 45 in total length.

Muraenichthys tasmaniensis McCulloch

15*b*. Dorsal fin origin about $\frac{1}{3}$ head length behind anus.

Muraenichthys iredalei Whitley

15*c*. Dorsal fin origin over anus or anal origin or nearly so.

16*a*. Greatest depth 27 to 30 in total length.

Muraenichthys macrostomus Bleeker

16*b*. Greatest depth 40 to 50 in total length.

Muraenichthys australis Macleay[11]

14*b*. Teeth on maxillary and on dentary in at least two rows or in a narrow to wide band, sometimes becoming one row posteriorly; dorsal origin from nearly over anus to $\frac{1}{2}$ head length behind anus.

17*a*. Snout bluntly rounded; bases of anterior nostrils a little behind tip of chin; greatest depth 20 to 30 in total length, teeth in broad bands on maxillary, dentary and on vomer.

Muraenichthys schultzei Bleeker

17*b*. Snout acute; greatest depth 30 to 50 in total length.

18*a*. Rear margin of eye only slightly in advance of rictus of mouth; tip of snout to rictus about 4 in head; bases of anterior nostrils opposite tip of chin; teeth on inner row of maxillary and dentary largest; eye diameter about equal to distance from tip of chin to tip of snout; anterior margin of eye closer to rictus than tip of chin; snout moderately pointed; eye 12 to 15 in head.

Muraenichthys gymnotus Bleeker

18*b*. Rear margin of eye notably in advance of rictus; tip of snout to rictus about 3 in head; eye a little in front of middle of cleft of mouth; snout much pointed; eye 26 to 27 times in head.

Muraenichthys acutirostris Weber and De Beaufort

13*b*. Rear margin of eye over rictus of mouth; dorsal fin origin from slightly in front of anus to $\frac{1}{2}$ head length behind anus; snout bluntly rounded; greatest depth about 24 to 34 in total length.

Muraenichthys laticaudata (Ogilby)

Muraenichthys johnstonensis, n. sp.

Fig. 1

Holotype.—U.S.N.M. no. 141268, Johnston Island, northern reef, August 28–29, 1947, L. P. Schultz, total length 145 mm.

Paratypes.—U.S.N.M. no. 141269, taken with holotype and bearing same data, total length 81

[7] Synonym: *Muraenichthys breviceps* Günther, Ann. Mag. Nat. Hist., ser. 4, 17: 401. 1876 (Tasmania).

[8] Probable synonym: *Muraenichthys malabonensis* Herre, 1923.

[9] Synonym: *M. microstonus* Bleeker, Atlas Ichthy.: 32, pl. 150, fig. 2. 1864 (Celebes Sea).

[10] Synonym: *Muraenichthys elerae* Fowler, 1934, U.S.N.M. no. 92348, holotype.

[11] Probable synonym: *M. oliveri* Waite, 1910.

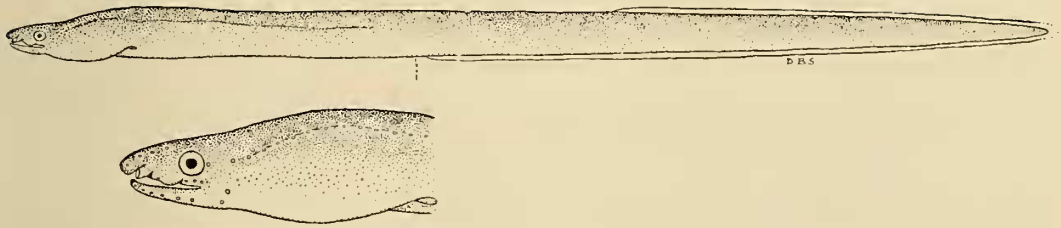

Fig. 1.—*Muraenichthys johnstonensis*, n. sp.: Holotype (U.S.N.M. no. 141268), from Johnston Island; total length 145 mm.

mm; U.S.N.M. no. 141692, Bikini Atoll, Arji Island, lagoon, depth 20 to 40 feet, August 7, 1946, Brock and Herald, 1 specimen, 122 mm.

Description.—Precision measurements were made on the types and these data are recorded in thousandths of the total length in table 1.

Greatest depth 24 or 25, head 7.9 to 8.5, snout to anus 2.6 to 2.7, snout to dorsal fin origin 1.8, all in the total length. Greatest depth 3.0, snout tip to tip of chin 11 to 15, eye 11 to 13, snout 4.4 to 5.0, interorbital space 8.5 to 9.3, snout to rictus 3.3 to 3.7, all in the length of the head.

Posterior nasal opening in upper lip below front of eye with valvular flap, anterior nostrils tubular, their bases opposite tip of chin; no groove on under side of snout between nostrils; eye small, without free margin; dorsal fin origin about 1.3 to 1.5 head lengths behind anus; anal origin close behind anus; both dorsal and anal fins confluent with the small minutely rayed caudal fin; anus a little behind the front third of the total length; gill opening a small pore on lower sides; no pectoral fin; lateral line near middle of sides incomplete, ending a little in front of anus; lips without cirri; tongue adnate to floor of mouth; teeth almost villiform in a band on maxillary, broadening posteriorly opposite eye, those on dentary similar and in a band; no teeth on vomer; teeth either lacking on premaxillary or embedded; rear margin of eye over rictus or slightly behind it, front margin of eye closer to rictus than tip of chin; snout bluntly rounded.

Color in alcohol.—Sides and back finely brown pigmented; ventral side white; area below and behind eye white.

Remarks.—This species is closely related to *M. retropinnis* Fowler in regard to its peculiar dentition, especially the long band of teeth on the maxillary broadened opposite orbit and complete lack of teeth on the vomer. It differs from *retropinnis* in having a robust body of a compressed shape instead of more tubular as in *retropinnis*. From other species of *Muraenichthys* in the Pacific it may be separated by means of the key.

Muraenichthys philippinensis, n, sp.

Fig. 2

Holotype.—U.S.N.M. no. 134951, Philippine Islands, Badian Island, lat. 11°31′40″N., long. 124°42′40″E., *Albatross*, April 14, 1908, 32 fathoms, total length 92 mm.

Paratype.—U.S.N.M. no. 134952, Philippine Islands, Luzón, Balayan Bay, *Albatross*, February 20, 1908, surface light, total length 119 mm., condition poor.

Description.—Precision measurements were made on the types and these data, recorded in table 1, are expressed in thousandths of the total length.

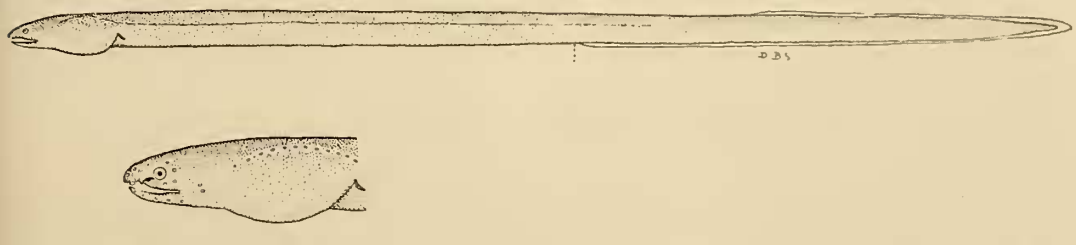

Fig. 2.—*Muraenichthys philippinensis*, n. sp.: Holotype (U.S.N.M. no. 134951), from Badian Island, Philippines; total length 92 mm.

Greatest depth 37, head 9.9 to 10.2; snout to anus 1.9, snout to dorsal origin 1.4, all in the total length. Greatest depth 3.7, snout tip to tip of chin 47 to 58, eye 23, snout 7.7 to 7.8, interorbital space 9.8 to 10.3, snout to rictus 3.7 to 3.9, all in the length of the head.

Posterior nasal opening on outside of upper lip at lower front of eye, with a short valvular flap, anterior nostrils tubular, their bases opposite tip of chin; no groove under tip of snout; eye small, without free margin; dorsal fin origin about $1\frac{2}{3}$ to $1\frac{4}{5}$ head lengths behind anus; anal fin origin close behind anus; both dorsal and anal fins confluent with the small minutely rayed caudal fin; anus farther posteriorly than is usual in echelid eels, only a little in front of the middle of the total length; gill opening a rounded pore on sides; no pectoral fins; lateral line along sides, incomplete, ending a little less than a head length behind anus; lips without cirri; tongue adnate to floor of mouth; teeth short conical, uniserial on maxillary and on dentary, biserial on vomer, and a few teeth on premaxillary far forward, rear margin of eye notably in advance of rictus; anterior margin of eye closer to tip of chin than rictus; snout bluntly pointed.

Color in alcohol.—Plain pale, probably whitish when first preserved.

Remarks.—This new species differs from all other species of *Muraenichthys* of the Pacific in the combination of dorsal origin far behind a vertical line thru anus, posterior nostrils opening on outside of upper lip below front of eye, and the dentition. It may be separated from other species by means of the key.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

THE ACADEMY

425TH MEETING OF BOARD OF MANAGERS

The 425th meeting of the Board of Managers, held in the Cosmos Club, February 14, 1949, was called to order at 8:05 P.M. by the President, F. H. H. ROBERTS, Jr. Others present were: F. B. SILSBEE, H. S. RAPPLEYE, N. R. SMITH, H. A. REHDER, ALAN STONE, W. W. DIEHL, W. N. FENTON, C. L. GAZIN, F. D. ROSSINI, C. F. W. MUESEBECK, ALEXANDER WETMORE, W. A. DAYTON, R. S. DILL, MARGARET PITTMAN, H. W. HEMPLE, O. B. FRENCH, F. M. SETZLER, and, by invitation, HERBERT FRIEDMANN, R. W. BROWN, J. L. SHERESHEFSKY, and M. A. MASON.

The minutes of the 424th meeting were read and approved.

The following appointments were announced by the President:

Appointed Members of Executive Committee: F. B. SILSBEE and N. R. SMITH.

Board of Editors of the Journal: ALAN STONE was designated Senior Editor. F. J. HERMANN was named to replace J. I. HOFFMAN. J. C. EWERS and J. I. HOFFMAN were appointed Associate Editors for terms of 3 years representing, respectively, the Anthropological Society of Washington and the Chemical Society of Washington.

Committee on Membership: H. E. MCCOMB (chairman), R. G. BATES, C. A. BETTS, WILBUR BURBANK, W. W. DIEHL, REGINA FLANNERY, C. L. LARSON, C. S. PIGGOT, R. J. SEEGER, H. W. WELLS, C. E. WHITE.

Committee on Meetings: HERBERT FRIEDMANN (chairman), G. A. COOPER, F. M. DEFANDORF, C. L. GARNER, F. B. SCHEETZ.

Committee on Monographs: To January 1950—R. W. BROWN (chairman), H. A. REHDER. To January 1951—W. N. FENTON, E. W. PRICE. To January 1952—P. H. OEHSER, J. R. SWALLEN.

Committee on Awards for Scientific Achievement: W. A. DAYTON (general chairman). *For the Biological Sciences:* W. A. DAYTON (chairman), H. P. BARSS, ELMER HIGGINS, B. J. OLSON, E. W. PRICE, T. D. STEWART, J. S. WADE. *For the Engineering Sciences:* H. G. DORSEY (chairman), R. C. DUNCAN, H. N. EATON, H. W. HEMPLE, W. R. OSGOOD, WALTER RAMBERG, O. W. TORRESON. *For the Physical Sciences:* W. J. ROONEY (chairman), N. L. DRAKE, F. L. MOHLER, P. A. NEAL, M. X. SULLIVAN, J. H. TAYLOR, J. S. WILLIAMS.

Committee on Grants-in-Aid for Research: J. L. SHERESHEFSKY (chairman), ANNA E. JENKINS, J. M. COOPER.

Committee on Policy and Planning: To January 1950—J. E. GRAF (chairman), F. B. SILSBEE. To January 1951—A. H. CLARK, L. W. PARR. To January 1952—M. A. MASON, J. I. HOFFMAN.

Committee of Auditors: L. G. HENBEST (chairman), N. F. BRAATEN, C. V. MORTON.

Committee of Tellers: N. M. JUDD (chairman), P. S. CONGER, J. P. E. MORRISON.

The following report of the Executive Committee was presented:

The Executive Committee met in the Cosmos Club at 8:00 P.M., on February 9, 1949, to consider the 1949 Academy budget. Present were: F. H. H. ROBERTS, JR. (chairman), H. S. RAPPLEYE, F. B. SILSBEE, N. R. SMITH, and F. M. SETZLER. After